REGION 5 NPDES
REAL TIME PERMIT REVIEW
MINNESOTA
FY12-13

EPA DRAFT INTERNAL DELIBERATIVE

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I. BACKGROUND

National Pollutant Discharge Elimination System (NPDES) Permit Quality Reviews (PQRs) are an evaluation of a select set of NPDES permits to determine whether permits are developed in a manner consistent with applicable requirements established in the Clean Water Act (CWA) and NPDES regulations. Through this review mechanism, EPA promotes national consistency, and identifies successes in implementation of the NPDES program and identifies opportunities for improvement in the development of NPDES permits.

Region 5 selects draft permits for review based on the Clean Water Action Plan principle of identifying water quality problems and utilizing EPA's authority and tools to address them. The Clean Water Action Plan directly calls for utilizing one of the most direct tools that EPA has available to ensure NPDES permits issued by states are protective of water quality, that is to review the permits, and when necessary, object to those permits which do not meet federal standards. Region 5 focuses its resources to reviewing those discharges which pose the greatest threat to vulnerable populations and impaired waters. The Region annually undertakes a process to identify the expiring permits which discharge where there may be environmental justice concerns, drinking water sources, impaired waters, interstate issues, or compliance concerns. In addition, all general permits are reviewed. This selection process was identified as a National Best Practice in FY12. The Region always maintains and frequently exercises its right to review any draft or proposed permits beyond those specifically identified through the process.

Region 5 conducts "real time reviews" of draft NPDES Permits while the permits are being developed and finalized rather than reviewing just those permits that have already been finalized. During FY12-13, Region 5 reviewed Draft permits consistent with the Memorandum of Agreement (MOA) authorizing Minnesota's Pollution Control Agency (MPCA) NPDES program. In addition, the review process requires that a revised copy of the proposed NPDES permit be transmitted to EPA together with a copy of all statements received during the public notice period. EPA's second review ensures that EPA's significant comments are addressed in the final permit. At that time, the national Permit Quality Review (PQR) checklist is filled out. The real time reviews ensure that the permits that are most critical to solving our Region's water quality problems are issued in a form compliant with the CWA and consistent with solving those problems. Completion of the PQR checklist on the final permit ensures a nationally consistent evaluation of permit quality is implemented. The day to day contact between our staff and state permit writers during the real time review process has been an invaluable tool to improve our coordination, communication, and relationship and further our effort to achieve our common water quality goals.

While not all EPA comments must be addressed before any permit proceeds, all significant issues must be resolved. The Region will exercise its authority to object the permit if these significant issues are left unresolved.

In addition to the real time reviews of individual and general permits, the Region has initiated a review of each state's permit templates. The permitting templates, fact sheet and statement of basis templates, and the permitting checklists for Minnesota PCA has been received here in the

Region. The Region expects the template reviews and corrections to provide an additional level of oversight to ensure that all standardized permit language is consistent with federal permitting requirements and to a mechanism to address several of the significant issues identified in this report. Due to resource constraints and that lack of significant template related issues identified to date through individual permit reviews, Minnesota template reviews have been a lower priority for the region than review of specific state permits.

The Region conducted the substantial portion of the technical review of the following permits under the revised SOP during FY12-13. As part of this process, Environmental Justice (EJ) standards were incorporated into the Federal/State checklists for Public Wastewater Treatment Works and Industrial facilities. From these applications for reissuance or a modification, a recheck of about 60 permits, were randomly selected each year for FY12-13 for EJ screening and/or concerns.

The report organized the finding of the reviews as follows: core permit reviews (including national topics) and regional topic area reviews. The permit reviews focused on core permit quality and included a review of the permit application, permit, fact sheet, and available correspondence, reports or documents that provide the basis for the development of the permit conditions.

The core permit review involved the evaluation of selected permits and supporting materials using basic NPDES program criteria. Reviewers completed the core review by examining selected permits and supporting documentation, assessing these materials using standard RTR and PQR tools, and obtaining information regarding the permit development process. The core review focused on the central tenets of the NPDES Permitting program to evaluate the Minnesota PCA NPDES program ([HYPERLINK "http://www.epa.gov/npdes/pubs/tenets.pdf"]). In addition, discussions between EPA and state staff throughout the year addressed a range of topics including program status, the permitting process, responsibilities, organization, and staffing. National topic area permit reviews are conducted to evaluate specific issues or types of permits in all states during the year that those topic area permits are developed.

Regional topic area reviews focus on regionally-specific permit types or particular aspects of permits that the EPA Region determines are of regional interest. The regional topic areas selected by EPA Region 5 included: mining, nutrient s, thermal, combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs).

A total of 15 permits were substantially reviewed as part of this report. Some of the permits listed as part of the review may have been initiated prior to FY12 and some may not be issued final by the end of FY13 but are included in the report because the bulk of EPA's work reviewing the draft permits occurred during the period. EPA Region 5 developed a permit selection matrix and state specific GIS tools to identify permits significant to implementing national and regional priorities. The list of permits reviewed are listed in Table 1 below:

	Facility Name	US EPA NPDES No.	Type	Year Reviewed	Core Review and Core Topic Areas						Region 5 Topic area			
					Pesticide Application	Stor m-water	Nutrients	Pretreat-ment	EJ Ranking	Wild Rice_1 Mile	Mining	CSO	SSO	Thermal
1	Agripeat Cromwell	MN0055662	Ind	12							x			
2	Alexandria Lakes Area SSD	MN0040738	Munc	13			x							
3	Nonmetallic Mining and Associated Activities	MNG490000	GP	12							x			
4	Construction Storm Water (CSW) – GP	MNR100001	GP	12		x								
5	Glencoe	MN0022233	Munc	13			x							
6	Litchfield WWTF	MN0023973	Munc	13			x							
7	Little Falls WWP	MN0020761	Munc	13			X		X	X				
8	Non-Contact Cooling Water - GP	MNG25	GP	13										X
9	Non-Contact Cooling Water - GP	MNG255	GP	13										X
10	NSP DBA XCEL Energy-Riverside	MN0000892	Ind	13										x
11	Water Treatment Facility	MNG640000	GP	13										
12	Western Lake SSD	MN0049786	Munc	13			x						x	
13	Red Wing WWTP	MN0024571	Munc	13			X		X					
14	Small MS4s - GP	MNR040000	GP	13		X								
15	Essar Steel	MN0068241	Ind	12							x			
16	Magnetation Plant 4*	MN0070378	SDS	13							x			
17	Mesabi Nugget	MN0067687	Ind	12/13							x			

*This is a state disposal system (SDS) permit that was public noticed containing several references to CWA authorities and NPDES regulations, including statements that the permit was being issued under CWA authorities. R5 commented to MPCA that they remove all such references from this SDS permit.

II. STATE PROGRAM BACKGROUND

MPCA's general authority to enforce environmental laws and administer a permit program is set forth in the Minnesota Environmental Protection Act, Laws 1973, Chapter 412, (the Act), at Section 116D.01. The State's Water Pollution Control Act is contained in Minn. Stat. Chapter 115. The MPCA implements its regulatory program for point source discharges by way of the NPDES and water quality standards programs, the former of which establishes NPDES permitting requirements for various classes of sources necessary to adopt substantive effluent limits under Chapter 7001 (Permits and Certifications) and Chapter 7050 (Water Quality Standards), respectively, of the Minnesota Administrative Rules. *See* Minn. Adm. R. §§ 7001 and 7050. In particular, the Environmental Protection Act authorizes the MPCA Board "to promote efforts that will prevent or eliminate damage to the [water] environment…" This includes regulations, requirements, water quality standards, effluent standards, standards for the issuance of permits, and inspection and monitoring requirements. Minnesota Environmental Protection Act, Chapter 116D. The Act directs the MPCA Board to adopt requirements, standards, and procedures which will enable the State to participate in and implement the NPDES program. The Water Pollution Control Act provides that "the agency shall have the authority to perform any and all acts minimally necessary including, but not limited to, the establishment of … permit conditions, consistent with and, therefore, not less stringent than, the provisions of the Federal Water Pollution Control Act, as amended…" Minn. Stat. § 115.03, Subd. 5.

Regulations adopted by the Minnesota PCA Board prohibit the discharge of pollutants to waters of the State without an NPDES permit, and require compliance by permittees with effluent limitations and standards as established in permits. See Minn. Adm. R. §§ 7001 and 7050. Minn. Adm. R. §§ 7001.0040 and 7001.0050 establish permit application requirements for new and existing dischargers. Existing dischargers are required to apply for a permit at least 180 days before the expiration date of the existing permit or the planned date of the commencement of facility construction or of the activity. New dischargers are required to apply for a permit no later than 180 days in advance of the date on which the facility is to commence operation. Minn. Adm. R. § 7001.0040, Subparts 1 and 3.

A. Program Structure

MPCA develops, issues, and administers NPDES permits in Minnesota. The NPDES's program is regionalized in 6 regions including the main office located at 520 Lafayette Road, St. Paul, Minnesota. There are seven field offices located in Minnesota in Brained, Detroit Lakes, Duluth, Mankato, Marshall, Rochester, and Willmar. Each office is responsible for NPDES permitting, inspections, and enforcement but some permits are developed and issued by district offices, some involve a combination of staff from district and central offices, and some permits are developed and issued by the central office. The State Public Facilities Authority, Department of Health, Department of Natural Resources, Department of Economic Development, and Department of Agriculture are occasionally involved in the permitting process.

The Clean Water Act, §402(c)(2), requires states with approved NPDES programs, including Minnesota, to administer their programs in accordance with CWA §402 and the regulations EPA established under CWA §304(i)(2) at all times. These regulations appear at 40 C.F.R. Part 123. They require approved states to prohibit the discharge of pollutants from point sources unless the discharge is in compliance with an NPDES permit. They also establish requirements regarding: (1) the submission of NPDES permit applications to, and processing of NPDES permit applications (2) and development of permits by, approved states (see 40 C.F.R. §123.25), (3) state programs for evaluating compliance by point sources (see 40 C.F.R. §123.26), and (4) state enforcement authority (see 40 C.F.R. §123.27). MPCA's procedures and/or guidance for developing NPDES permits are in the permit writers manual and the permitting process checklists along with WQBEL checklists. Permits are logged, tracked and reviewed through Minnesota's permit compliance system, permitting, compliance, and enforcement information management system, which facilitates the issuance of permits and manages compliance.

MPCA currently uses the Delta database that contains all NPDES related data. Also a generated NPDES/SDS Permit Procedural Checklist. This document provides detailed internal directions for application reviews, documented approvals from other staff at each stage of the review process. Other systems presently in use Access, Excel and EQUIS data systems also support NPDES permit development and implementation. Permits applications are routed automatically to the permit writer assigned in Delta for a 30-day application completeness review. MPCA uses standard templates that are auto filled by the database. All permit language and limits and monitoring requirements are written in the database and used to produce the permit. Attached is a copy of MPCA's electronic NPDES/SDS Permit Procedural Checklist generated from this database. This checklist provides detailed internal directions for application reviews, facility operations, requirements and limitations, sampling and monitoring, technical documents, or other forms of reports or any permit conditions including documented approvals from other staff at each stage of the review process of new, renewal, modification and/or transfers down to the issuance of the permit.

Once a preliminary review by the Minnesota Permit Document Coordinator is complete that includes verification of receipt of correct application, forms and fee indicated on the Permit Application Checklist, under Minn. Stat. 116.03, there should be sufficient details to allow for drafting and issuance of a permit. If the information on application provided is determined to be sufficient and complete. Minn. Adm. R. § 7001.0150, Subp. 2, provides that "each draft and final permit must contain conditions necessary for the permittee to achieve compliance with applicable Minnesota or federal statutes or rules, including each of the applicable requirements in parts 7045.0450 to 7045.0649 and 7045.1390, and any conditions that the agency determines to be necessary to protect human health and the environment." Minn. Adm. R. § 7053.0205, Subp. 6, provides that "the requirements of [chapter 7053] ... are in addition to any requirements imposed on a discharge by the Clean Water Act, United States Code, title 33, sections 1251 et seq., and its implementing regulations.

In the case of a conflict between the requirements of [chapter 7053], chapters 7050 and 7052, and the requirements of the Clean Water Act or its implementing regulations, the more stringent requirement controls."

To assure that permits are issued in a timely manner Minnesota Stat 116.03 goal is to issue permits within 150-days of receipt of a complete application and the permit will need to be on public notice within 115-days. If the application is incomplete MPCA notifies applicants of incomplete applications within 30 days. In addition to the above, Minn. R. 7001.0150 subp 3 item G requires that incomplete or incorrect reports of information may be amended, if possible, electronically. MPCA must be notified and MPCA will provide direction for the amendment submittals

Application forms are available on-line at http://www.pca.state.mn.us/water/permits/index.html. Expiring permits are flagged within the system and a reminder of renewal letter is sent out to those facilities 180. Renewal applications of prior permits have / are revised and updated before reissuance. If a permit application for renewal has not been received 180 days prior to permit expiration, MPCA contacts the Permittee to complete and obtain a permit application.

The Effluent Limits Unit staff set WQBELs; TMDL staff; data management staff; MNIT staff; and surface water sampling staff are involved in the permitting process. Upon the permit writers request the Effluent Limits staff identifies any incomplete information or additional information required within 10-days of receipt of request of the review.

The Supervisor and the Basin Planners/TMDL staff in which the facility is located are contacted to see if there are any issues with the facility's discharge as it pertains to the location basin and Total Maximum Daily Load (TMDL) projects on particular steam reaches.

Determination of reasonable potential and calculation of water quality based effluent limits for toxic pollutants are done on a spreadsheet derived from EPAs Technical Support Document for Water Quality – based Toxics Control. When necessary MPCA uses CORMIX to calculate mixing zones. For most parameters, dilution is determined with the use of stream flow design estimates (e.g. $7Q_{10}$).

The commissioner must give public notice of a completed NPDES permit application for new municipal discharges in the official county newspaper of the county where the discharge is proposed. In addition to other steps that are done for public notice of a permit, public notice for a general permit requires publication in the State Register in accordance with Minn. R. 7001.0210, subp. 4. MPCA uses an e-public notice system.

Peer reviews are made by other permit writers and other appropriate staff, including supervisor(s) and the permit compliance/enforcement staff, engineering staff, basin planner, etc. review the draft permit; make appropriate changes before printing of the final draft for public notice. In some cases, as in mining permits, other state agencies also participate in the peer review, such as the Minnesota Department of Natural Resources. If the permit contains new monitoring requirements, a compliance schedule, or something out of the ordinary, a pre-public notice draft is routed and sent to the Permittee, the data and information management staff for review and comment prior to the formal public notice permit.

Permit files and the administrative record are kept both in paper and electronic format. Electronic files are kept in the DELTA database. The Northeast Region minor facility files are maintained in the Duluth Regional Office. For municipal/domestic facilities, Permit files are maintained electronically, as well as the physical files. The Administrative Record or

Administrative Document Set with its specific naming convention for specific documents (Table of Contents, Fact Sheet, Statement of Basis, Notice of Intent, etc. is "sketched out" by the system automatically in DELTA and available electronically.

B. Universe and Permit Issuance

While the universe of permits and the percentage of those current fluctuates throughout the year, based on information provided at the time of drafting of this report, MPCA reported that it administers permits for the following:

- POTWs
  - 74 major and 368 minor; 0 of these facilities have CSOs
- non-municipal facilities
  - 23 major and 315 minor
- 1175 concentrated animal feeding operations (CAFO) facilities
- Stormwater general permits covering:
  - 276 municipal permittees (municipal separate storm sewer systems (MS4s))
  - 2068 industrial permittees – active no exposure
  - ~4000 construction permittees.
- MPCA also has non-stormwater general permits that cover 276 permittees for facilities engaged in activities such as non-contact cooling water, controlled domestic stabilization pond, water treatment plant backwash, contaminated groundwater pump out, and non-metallic mining 4-pesiticide, industrial stormwater, construction stormwater, MS4, and feedlots.
- MPCA also issued four 4-general permits for pesticide application in the state of Minnesota (MNG87A000, MNG87B000, MNG87C000 and MNG87D000.

The MPCA estimates that 32 percent of NPDES major permits and 12 percent of NPDES minor permits are expired and administratively continued (backlogged). There are 18 expired permits for mines and mining related activities (1 Major, 17 Minors). Twelve have been expired for more than 5 years (1 Major, 11 Minor).

The federal regulation at 40 C.F.R. §122.44 (made applicable to states by 40 C.F.R. §123.25(a)(15)) addresses a variety of topics, such as technology-based effluent limitations and standards, and implementing water quality standards and state requirements, including water quality criteria expressed in either a numeric or narrative fashion. The regulation at 40 C.F.R. §122.44(d)(1) requires that permits include any requirements necessary to achieve water quality standards established under section 303 of the CWA, including state narrative criteria. Section 122.44(d)(l)(i) requires that limitations must control all pollutants that "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Section 122.44(d)(l)(ii) further provides that when conducting such a reasonable potential analysis, the permitting authority "shall use procedures" that account for certain specified factors in the regulation. Section 122.44(d)(l)(vii) provides that limitations must be derived from and comply with water quality standards and must be consistent with the

assumptions and requirements of any approved TMDL. Technology-based effluent limits (TBELs) in NPDES permits are determined by using one or more of the following:

1) National standards for municipal dischargers or effluent guideline regulations (BPT, BCT, BAT, and NSPS) established by EPA for various industrial categories;
2) Case-by case analyses based on best professional judgment (BPJ).

Case-by-case BPJ limits are determined using: 1) permit file information (e.g., current and previous NPDES application forms and correspondence files; previous NPDES permit and fact sheet; statistical evaluation of effluent performance data from discharge monitoring reports (DMRs); compliance inspection reports); 2) information from existing facilities and permits (e.g., NPDES Individual and general permits for other NPDES permits issued to facilities in the same region or state, or that include case-by-case limitations for the same pollutants; toxicity reduction evaluations (TREs) for selected industries; ICIS-NPDES data; literature (e.g., technical journals and books); treatability manuals, state guidance documents); and 3) effluent guidelines development and planning information (industry experts within EPA headquarters, EPA Regions, and states; ELG Technical Development Documents, CWA section 308 questionnaires, proposed and final regulations, and EPA guidance manuals; EPA's Technical Support Documents (TSDs)).

MPCA recognizes that the maintenance of existing high quality in some waters of outstanding resources value to the state is essential to their function as exceptional recreational, cultural, aesthetic, or scientific resources. To preserve the value of these special waters, the agency prohibits or stringently controls new or expanded discharges from either point or nonpoint sources to outstanding resource value waters.

Monitoring frequencies for municipal dischargers are based on a matrix that has been established for POTWs. Monitoring requirements for non-municipal dischargers (industrial) are based on guidance established and available to permit writers

Once the public notice, draft permit, and fact sheet are finalized, the signed public notice is sent to the local newspaper for publication, and there is a 30-day period for public review and comment. Any comments are reviewed by MPCA staff, who develop written responses that are included in the administrative record.

III. CORE REVIEW FINDINGS

A. Basic Facility Information and Permit Application

1. Facility Information

Basic facility information is necessary to properly establish permit conditions. For example, information regarding facility type, location, processes and other factors is required by NPDES permit application regulations (40 CFR §122.21) because it is essential for developing technically sound, complete, clear and enforceable permits. Similarly, fact sheets must include a description of the type of facility or activity subject to a draft permit.

The 17 Minnesota NPDES permits and fact sheets, and one SDS permit with NPDES elements, reviewed during the core review include permit issuance, effective and expiration dates, authorized signatures, and contain specific authorization-to-discharge information. These permits and fact sheets identify the location of the facility, identify the receiving waterbody by name and include a description of the types of activities and treatment, and identify outfalls. The fact sheets discuss the designated uses and any impairment of the receiving waterbodies. The SDS permit authorized a discharge to ground water only yet it contained numerous references to the CWA and NPDES.

2. Permit Application Requirements

Federal regulations at 40 CFR §§122.21 and 122.22 specify application requirements for permittees seeking NPDES permits. Although federal forms are available, authorized states are also permitted to use their own forms provided they include all information required by the federal regulations. This portion of the review assesses whether appropriate, complete, and timely application information was received by the state and used in permit development. In general, MPCA provided current, appropriate, and complete permit applications. No significant issues were noted.

B. Technology-based Effluent Limitations

NPDES regulations at 40 CFR §125.3(a) require that permitting authorities develop technology-based requirements where applicable. Technology based effluent limitations (TBELs) represent the minimum level of control that must be imposed in a permit. Permits, fact sheets and other supporting documentation for POTWs and non-POTWs were reviewed to assess whether TBELs were properly incorporated in to the state's permits.

1. TBELs for POTWs

POTWs must meet secondary or equivalent to secondary standards (including limits for BOD, TSS, pH, and percent removal) and must contain numeric limits for all of these parameters (or authorized alternatives) in accordance with the Secondary Treatment Regulations at 40 CFR Part 133. A total of 4 POTW permits were reviewed. No significant comments were noted.

2. TBELs for Non-POTW Dischargers

Permits issued to non-POTWs must require compliance with a level of treatment performance equivalent to Best Practicable Control Technology Currently Available (BPT), Best Available Technology Economically Achievable (BAT), and Best Conventional Pollutant Control Technology (BCT) for existing sources, and consistent with New Source Performance Standards (NSPS) for new sources. Where federal effluent limitations guidelines (ELGs) have been developed for a category of dischargers, the TBELs in a permit must be based on the application of these guidelines. If ELGs are not available, a permit must include requirements at least as stringent as BPT/BAT/BCT developed on a case-by-case using best professional judgment (BPJ) in accordance with the criteria outlined at 40 CFR §125.3(d). The following issues were noted:

- The general permit did not contain numeric effluent limitation applicable to all facilities within a category. MPCA proposed to set specific limits in the notice of coverage letter after considering the information submitted with the Notice of Intent for each facility. The permit writer has agreed to include numeric limitations for the general categories for each waterbody type and develop specific categories for individual facilities currently covered by the general permit that have site specific limits. While in principal, general permits should not be used to cover individual facilities that need specific limits, as long as categories are developed, it is an allowable interpretation of the regulation. (NCCW)

- The general permits did not include a BTA determination consistent with the 316(b) requirements of the CWA. The permit writer has agreed to make a BTA determination in the permits. (NCCW)

- The general permits as drafted stated that flow limits would be specified in the notice of coverage letter. The permit writer clarified that these were not intended to be flow limits, but merely factual statements of the flow the permittee claimed to discharge. EPA recommended that a reporting requirement be included to indicate whether that flow was being exceeded. (NCCW)

- The general permits stated that if TMDLs were developed that WLA and corresponding limit would be included in the notice of coverage. This would not be consistent with federal requirements. The permit writer understands that if a TMDL was developed, that the permits would require modification to incorporate the WLA and corresponding limit. (NCCW)

C. Water Quality-Based Effluent Limitations

The NPDES regulations at 40 CFR §122.44(d) require permits to include any requirements in addition to or more stringent than technology-based requirements where necessary to achieve state water quality standards, including narrative criteria for water quality. To establish such "water quality-based effluent limits" (WQBEL), the permitting authority must evaluate the proposed discharge and determine whether technology-based requirements are sufficiently stringent, and whether any pollutants or pollutant parameters could cause or contribute to an excursion above any applicable water quality standard.

The permit reviews for Minnesota assessed the processes employed by permit writers and water quality modelers to implement these requirements. Specifically, the reviewed permits, fact sheets, and other documents in the administrative record to evaluate how permit writers and water quality modelers:

- determined the appropriate water quality standards applicable to receiving waters,
- evaluated and characterized the effluent and receiving water including identifying pollutants of concern,
- determined critical conditions,

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- incorporated information on ambient pollutant concentrations,
- assessed any dilution considerations,
- determined whether limits were necessary for pollutants of concern and, where necessary,
- calculated such limits or other permit conditions.

For impaired waters, the reviews also assessed whether and how permit writers consulted and developed limits consistent with the assumptions of WLAs established in applicable EPA-approved total maximum daily loads (TMDLs). The following WQBELs related comments were generated during the reviews:

- The general permits state that water treatment additives will be approved under the existing state process and will be authorized in the notice of coverage. This would not be consistent with federal requirements. *This is an ongoing issue in all of our states. During the permit cycle, WTAs will be approved by letter under the existing state process and incorporated into the permit at reissuance. Generally, WTA's do not require limitations and the changes are related to changes in name or product formulation, not the type of WTA.(NCCW)*

- Effluent limits tables drop TSS, P, K, etc. when the permit goes into the Variability of Operation scenarios. MPCA sent email and verbal feedback that those V of O tables are additional parameter limits, rather than a reduced set of parameter limits. The language in the permit did not appear to reflect that intent. (Glencoe)

- The proposed permit has a phosphorus limit of 2,874 kg/year. The limit was based on the water quality target for Lake Pepin, which is 100 ug/l for 122 days. We (R5) asked MPCA to set the phosphorus effluent limit by:
    - Including a short term average monthly limit by following the requirement in 122.45(d),
    - Including a long term 122-day (4 month) limit by following the State of Minnesota criteria for Lake Pepin (Glencoe, Litchfield, ALSSD, Little Falls)

- The permit does a good job of laying out the elements of the Stormwater Pollution Prevention Program that must be implemented by permittees, but does not include discharge limitations. We recommend you consider include language establishing requirements for the MS4 discharges, for example:

- The permittee shall not discharge the following substances from the MS4:
    - Solids that settle to form putrescence or otherwise objectionable sludge deposits.
    - Oil, grease, or other floating material that form noticeable accumulations of debris, scum, foam, or sheen.

- Color or odor that is unnatural and to such a degree as to create a nuisance.
- Toxic substances in amounts harmful to aquatic life, wildlife, or humans.
- Nutrients conducive to excessive growth of aquatic plants and algae to the extent that such growth is detrimental to desirable forms of aquatic life, creates conditions that are unsightly, or is a nuisance. (MS4)

- The draft Permit and Fact Sheet do not show the considerations or limits for Ammonia-N, but the permit lists monthly monitoring with 24 hour flow composite sampling only. Information for ammonia reasonable potential and justification should be included in the Fact Sheet and, if needed, appropriate limits for this parameter in the draft Permit.(Redwing)

- The draft Permit expresses the total mercury concentration limitation as a 12-month moving average. This type of limit does not conform to 40 CFR §122.45(d)(2) which states that the limitations shall, unless impracticable, be expressed as average weekly and average monthly values. Appropriate monthly average limits are necessary for this parameter. (Redwing, Litchfield)

- The draft permit expressed the total phosphorus (TP) load limitation as a 12-month moving total. This limit type does not conform to 40 CFR §122.45(d)(2) which states that the limitations shall, unless impracticable, be expressed as average weekly and average monthly values. (ALSD, Glencoe, Litchfield, Little Falls)

- The permit contained Variability of Operation sets of limits, which can only be triggered when the plant discharges higher volume. The VOO limits also allow the plant to discharge bypassing tertiary treatment (Glencoe)

- Parameter limits in the permit are unclear, due to the V of O modes having separate tables, but not clarifying entire set of parameters that apply. MPCA stated the template cannot be changed. (Glencoe)

- The draft permit includes TP limitations of 1.0 mg/L and 2,619 kg/day. The fact sheet supports these limitations stating that the reduction from TP limitations of 3,275kg/day in the previous permit is necessary due to water quality concerns. According to a September 25, 2013, MPCA memorandum, the more stringent limitation is based on a WLA value of 0.8 mg/L for TP. Therefore, to protect water quality, the TP concentration limit should be reduced to 0.8 mg/L. (Litchfield)

- Permit failed to include limitations for mercury and aluminum. Based on EPA's review and inclusion of the data, RP should have been identified. The final permit included the limitations. (Agripeat)

- Chronic whole effluent toxicity (WET) Limit (40 CFR §122.44(d)) – Data available to EPA indicates that the facility's discharge has reasonable potential to cause or contribute to chronic toxicity in the receiving waters. Therefore, a WET limit is required under 40 CFR §122.44(d), unless the permit includes water quality-based limits for pollutants that cause WET (see 40 CFR §122.44(d)(1)(v)). A WET limit must be derived from and comply with water quality standards and should be consistent with the Technical Support Document for Water Quality-based Toxics Control (TSD) (EPA/505/2-90-001) (Mesabi).

D. Monitoring and Reporting

NPDES regulations at 40 CFR §122.41(j) require permittees to periodically evaluate compliance with the effluent limitations established in their permits and provide the results to the permitting authority. Monitoring and reporting conditions require the permittee to conduct routine or episodic self-monitoring of permitted discharges and where applicable, internal processes, and report the analytical results to the permitting authority with information necessary to evaluate discharge characteristics and compliance status.

Specifically, 40 CFR §122.44(i) requires NPDES permits to establish, at minimum, annual monitoring for all limited parameters sufficient to assure compliance with permit limitations, including specific requirements for the types of information to be provided and the methods for the collection and analysis of such samples. In addition, 40 CFR §122.48, requires that permits specify the type, intervals, and frequency of monitoring sufficient to yield data which are representative of the monitored activity. The regulations at 40 CFR §122.44(i) also require reporting of monitoring results with a frequency dependent on the nature and effect of the discharge. The follow monitoring related items were noted during the reviews:

- The monitoring frequencies included in the permit for temperature and phosphorus were not appropriate. EPA recommended continuous monitoring for temperature with appropriate reporting frequency and to increase phosphorus monitoring to monthly. *The permit writer agreed to increase the temperature monitoring frequency for higher class waters to weekly from monthly. In regards to phosphorus, monitoring has been increased to monthly from quarterly for facilities that utilize phosphorus containing additives.(NCCW)*

- The Draft Permit contains monthly average and daily maximum Technology Based Effluent Limits (TBELs) with variations for subsectors, and based on the corresponding categorical standards in 40 CFR Part 436. The Draft Permit would require permittees to monitor their discharge "1 time per quarter". Federal Regulations at 40 CFR §122.44(i) require, among other things, that monitoring requirements be set to assure compliance with permit limitations, and with a frequency dependent on the nature and effect of the discharges. The Effluent Limitations Guidelines (ELGs) at 40 CFR Part 436 established the TBELs for the subsectors to be covered by the Draft Permit. The TBELs are described in terms of "average of daily values for 30 consecutive days" and "maximum for any one day".

- Facilities covered under this Draft Permit are not likely to have continuous discharges, but they may discharge for multiple days at a time. The frequency of discharge is such that there might not be a discharge some months, and there may be multiple discharge events during other months. To be as consistent as possible with the ELGs, 40 CFR §122.44(i), and the Permit Writer's Manual, the Draft Permit should be revised to require permittees to monitor each day that they discharge, and report the results to MPCA monthly. (Nonmetallic)

- Reporting Frequency - the Draft Permit requires submission of a Discharge Monitoring Report one time per year. Revise as appropriate to reflect monitoring frequency. (Nonmetallic)

- It is unclear to us how MPCA would be able to enforce the limits in this Draft Permit, under the draft monitoring regime. The limits are written as monthly average, but the discharges would not be monitored each month, and reporting is required yearly. It is unclear how MPCA will evaluate compliance with the TBELs for months when the facility does not report monitoring results. (Nonmetallic)

- The permit allows a Variability of Operation mode wherein the facility can bypass their normal tertiary treatment when their flow, due to excessive I/I reaches a threshold. The permit then requires instream monitoring to ensure both DO and ammonia limits are not exceeded. The trigger for switching back from V of O to normal treatment using tertiary is when the DO drops below 5 mg/L which would violate WQS. MPCA suggested they increase the trigger to 6 mg/L DO (the instream WQS for DO is 5mg/L. (Glencoe)

- Background monitoring station in a different watershed from the project and in this instance the water chemistry data collected at SW-001, when compared to the discharge data collected at SD-001 and SD-002, indicate that this is not an appropriate background monitoring location. Therefore, this data should not be used for the purposes of removing water quality based effluent limits in the permit, as MPCA had proposed to do. (Agripeat)

- Part 8.18 of the Draft Permit contains monthly average and daily maximum Technology Based Effluent Limits (TBELs) with variations for subsectors (J1 and J2), and based on the corresponding categorical standards in 40 CFR Part 436. The Draft Permit would require permittees to monitor their discharge "1 time per quarter". Federal Regulations at 40 CFR §122.44(i) require, among other things, that monitoring requirements be set to assure compliance with permit limitations, and with a frequency dependent on the nature and effect of the discharges. (Non-metallic mining GP)

- Chronic WET monitoring frequency (40 CFR §122.44(i) and 122.48(b)) – The draft permit requires analysis of WET one time per year. Consistent with sections 5.5.3 and 5.7.5 of the TSD, samples should be collected at a frequency consistent with the frequency used for limit development, and considering the factors listed in section 5.7.5 of the TSD. Samples must be collected during discharge. (Mesabi)

E. Special and Standard Conditions

Federal regulations at 40 CFR §122.41 require that all NPDES permits, including NPDES general permits, contain an enumerated list of "standard" permit conditions. Further, the regulations at 40 CFR §122.42 require that NPDES permits for certain of dischargers must contain additional standard conditions. Permitting authorities must include these conditions in NPDES permits and may not alter or omit any standard condition, unless such alteration or omission results in a requirement more stringent than required by the federal regulations.

In addition to standard permit conditions, permits may also contain additional requirements that are unique to a particular permittee or discharger. These case-specific requirements are generally referred to as "special conditions." Special conditions might include requirements such as: additional monitoring or special studies (e.g., pollutant management plan, mercury minimization plan); best management practices [see 40 CFR §122.44(k)], or permit compliance schedules [see 40 CFR §122.47]. Where a permit contains special conditions, such conditions must be consistent with applicable regulations. The following special and standard conditions items were noted:

- The permit does not appear to require an Industrial User (IU) survey during the term of the permit but requires the permittee to notify MPCA in the event of several condition changes; new SIU, anticipated changes in volume or quality of discharge that would require changes to local limits or cause the IU to become a SIU. (Glencoe)

- The permit includes requirements for planning and implementing Best Management Practices (BMPs) to meet wasteload allocations in approved TMDLs. However, the permit does not include a step requiring permittees to investigate to see if they discharge to an impaired water body (i.e., a water body on the State 303(d) list) and, if so, if there is an approved TMDL for those waters. We recommend that a step requiring such a check be added into the permit, or a question to that effect be included on the permit application form. (MS4)

- The permit does not establish requirements/timetables for communities to implement the SWPPP in new areas added to the MS4 (e.g., an adjacent unincorporated area is annexed, or a new subdivision is built). (MS4)

- Part V of the draft permit establishes General Conditions applicable to all permittees. The conditions included in the permit include many but not all of the standard permit conditions prescribed in 40 CFR §122.41. We recognize that some standard conditions may not apply to MS4 stormwater permittees, for example the condition dealing with treatment plant upsets. However, the following standard conditions from 40 CFR §122.41 are missing from the draft permit and should be included:

    - Need to halt or reduce activity not a defense
    - Duty to provide information
    - Monitoring and records (including use of 40 CFR Part 136 test procedures)

- Signatory requirement
- Reporting requirements (including [2] anticipated noncompliance, [7] other noncompliance, and [8] other information)(MS4, Const. SW, Litchfield)

- The draft permit may not be in compliance with 40 CFR §122.44(j)(2)(11) because it lacks a requirement to submit a written technical evaluation of the need to revise local limits following NPDES permit reissuance.(Glencoe, Litchfield)

F. Administrative Process

The administrative process includes documenting the basis of all permit decisions (40 CFR §124.5 and 40 CFR §124.6), coordinating EPA and state review of the draft (or proposed) permit (40 CFR 123.44), providing public notice (40 CFR §124.10), conducting hearings if appropriate (40 CFR §124.11 and 40 CFR §124.12), responding to public comments (40 CFR §124.17), and modifying a permit (if necessary) after issuance (40CFR §124.5). No items other than those already discussed in the fact sheet portion of the report were noted.

G. Administrative Record

The administrative record is the foundation that supports the NPDES permit. If EPA issues the permit, 40 CFR §124.9 identifies the required content of the administrative record for a draft permit and 40 CFR §124.18 identifies the requirements for final permits. Authorized state programs should have equivalent documentation. The record should contain the necessary documentation to justify permit conditions. At a minimum, the administrative record for a permit should contain the permit application and supporting data, draft permit, fact sheet or statement of basis, all items cited in the statement of basis or fact sheet including calculations used to derive the permit limitations, meeting reports, correspondence between the applicant and regulatory personnel, all other items supporting the file, final response to comments and, for new sources where EPA issues the permit, any Environmental Assessment, Environmental Impact Statement, or Finding of No Significant Impact.

The available permit records included the permit, fact sheet, application (including data), comment/response documents.

Current regulations also require that fact sheets include information regarding the type of facility or activity permitted, the type and quantity of pollutants discharged, the technical, statutory, and regulatory basis for permit conditions, the basis and calculations for effluent limits and conditions, the reasons for application of certain specific limits, rationales for variances or alternatives, contact information, and procedures for issuing the final permit. Generally, the administrative record includes the permit application, the draft permit, any fact sheet or statement of basis, documents cited in the fact sheet or statement of basis, and other documents contained in the supporting file for the permit.

The fact sheet and supporting documentation were reviewed with the administrative record. **The following fact sheet related comments were generated during the reviews:**

- The facility recently was converted to natural gas and a number of outfalls were closed. This should be documented in the fact sheet with what processes were discontinued and what outfalls were closed. (Riverside)

- The facility recently was converted to natural gas and it appears that Unit 8 was converted to a close cycle cooling system. This should be documented in the fact sheet as a component of the cooling system utilized at the facility for the BTA determination. (Riverside)

- EPA recommends that information be provided fact sheets for general permits that summarizes the key requirements of the permit. (MS4)

- The format of the general permits was complicated and included the notice of coverage as part of the permit document as it would be sent to the permittee. EPA recommended that the notice of coverage and permit limits and conditions be clearly separated and defined so it was clear what were permit requirements and what language to be included in the notice of coverage. *Discussions with the permit writer indicated the format was a result of the permit development computer program used in Minnesota. The permit writer was able to develop a clearer table of contents and format to indicate what pages comprised the notice of coverage and which were the general permit pages with the limits and conditions.(NCCW)*

- The fact sheet states that the draft permit complies with antibacksliding. New and increased discharges must satisfy the antidegradation (non-degradation) requirements in 40 CFR Part 131, to ensure protection of water quality. According to Minn. R. 7050.0185, antidegredation applies to "new or expanded discharge containing any toxic pollutant at a mass loading rate likely to increase the concentration of the toxicant in the receiving water by greater than one percent over the baseline quality." (Litchfield)

- The fact sheet is missing a discussion of the need to monitor chronic toxicity and potentially conduct a toxicity reduction evaluation. Please include in the fact sheet a description of the basis of chronic toxicity monitoring requirements and describe the potential need to conduct a toxicity reduction evaluation (TRE). (Litchfield)

- The draft permit provides for automatic coverage for construction projects that were started under the previous construction stormwater permit and which will continue under the reissued permit. Having a NOI submittal from the site owner/operator makes the reissued permit somewhat more enforceable as the State will have an acknowledgement and certification from the site owner/operator that he/she is aware of the new permit and intends to comply. MPCA must either send notices to owner/operators with projects started in one permit cycle and continuing on into the next, or the owner/operator must submit a NOI for coverage under the reissued permit. (Const. SW GP)

Documentation of Effluent Limitations

Permit records for POTWs and industrial facilities should contain comprehensive documentation of the development of all effluent limitations. Technology based effluent limits should include assessment of applicable standards, data used in developing effluent limitations, and actual calculations used to develop effluent limitations. The procedures implemented for determining the need for water quality-based effluent limitations, whether contained in the fact sheet or permit record, should be clear and straightforward in explaining the basis for establishing water quality-based effluent limitations, or for determining that water quality-based effluent limitations are not necessary for the discharge. The permit writer should adequately document changes from the previous permit, ensure draft and final limitations match (unless the basis for a change is documented), and include all supporting documentation in the permit file.

The permits and fact sheets developed for municipal facilities that were part of the core review provide a description of the wastewater treatment processes and describe in the fact sheet the basis of TBELs. Similarly, the fact sheets for the four non-municipal permits reviewed include a good description of the facility including processes, wastestreams and pollutants, and treatment, as well as the applicable standards and any special considerations. The following items were noted:

- The requirements for WET testing should be included in draft permit's Fact Sheet (Redwing)

- According to the fact sheet, average wet weather design flow (AWWDF) increased from 1.73 MGD in 1988, to 2.37 in 2008, to the current level to 3.41 MGD. MPCA characterized the additional new flow as discharge expansion and used the value to compute load limits. Did MPCA look into the source of the additional flow to determine if there is no excessive infiltration and inflow (I/I)? If so, please provide this information. If not, please include a permit requirement to quantify the extent of I/I, and if needed, investigate sewer rehabilitation alternatives. (Litchfield)

- The draft permit includes seasonal limitations for ammonia nitrogen (NH3-N). With exception of 2.1 mg/L limitations for June to September, all NH3-N imitations are less stringent than those in the previous permit. Information provided with the draft permit, including the Fact Sheet, does not adequately demonstrate that the limitations are sufficient to protect water quality as required by 40 CFR §122.44(d). (Litchfield)

- The draft permit includes an additional limitation for total silver. Anti-backsliding provisions of Section 402(o)(3) of the Clean Water Act (CWA) restricts the extent to which water quality based permit limits may be relaxed, and allows backsliding in certain limited circumstance described in CWA § 402(o) or § 303(d)(4), The fact sheet does not confirm the legal basis to justify the backsliding of NH3-N and total silver. Include information in the fact sheet as required by 40 CFR § 124.56. (Litchfield)

H. National Topic Areas

National topic areas are specific aspects of the NPDES permit program that warrant review based on the specific requirements applicable to the selected topic areas. These topic areas have been determined to be important on a national level.

1. Nutrients

For more than a decade, both nitrogen and phosphorus pollution have consistently ranked among the top causes of degradation of surface waters in the U.S. Since 1998, the EPA has worked at reducing the levels and impacts of nutrient pollution and, as a key part in this effort, has provided support to states to encourage the development, adoption and implementation of numeric nutrient criteria as part of their water quality standards (see the EPA's *National Strategy for the Development of Regional Nutrient Criteria*). In a 2011 memo to the EPA regions titled *Working in Partnerships with States to Address Nitrogen and Phosphorus Pollution through use of a Framework for State Nutrient Reductions*, the Agency announced a framework for managing nitrogen and phosphorus pollution that in part relies on the use of NPDES permits to reduce nutrient loading in targeted or priority watersheds.

To assess how nutrients are addressed in the Minnesota NPDES program, EPA Region 5 reviewed 6 POTW permits as well as relevant supporting documents.

Critical Findings

- The proposed permit has a phosphorus limit of 2,874 kg/year. The limit was based on the water quality target for Lake Pepin, which is 100 ug/l for 122 days. MPCA should set the phosphorus effluent limit by:
    - Including a short term average monthly limit by following the requirement in 122.45(d),
    - Including a long term 122-day (4 month) limit by following the State of Minnesota criteria for Lake Pepin (Glencoe, Litchfield, ALSSD, Little Falls)

2. Pesticides

On January 7, 2009, the Sixth Circuit vacated the EPA's 2006 NPDES Pesticides Rule under a plain language reading of the CWA. *National Cotton Council of America v. EPA*, 553 F.3d 927 (6th Cir., 2009). The Court held that the CWA unambiguously includes "biological pesticides" and "chemical pesticides" with residuals within its definition of "pollutant." In response to this decision, on April 9, 2009, the EPA requested a two-year stay of the mandate to provide the Agency time to develop general permits, to assist NPDES-authorized states to develop their NPDES permits, and to provide outreach and education to the regulated community. On June 8, 2009, the Sixth Circuit granted the EPA the two-year stay of the mandate. On March 28, 2011, the U.S. Court of Appeals for the Sixth Circuit granted the EPA's request for an extension to allow more time for pesticide operators to obtain permits for pesticide discharges into U.S.

waters. The court's decision extended the deadline for when permits would be required from April 9, 2011 to October 31, 2011.

As a result of the Court's decision to vacate the 2006 NPDES Pesticides Rule, NPDES permits are required for discharges of biological pesticides and of chemical pesticides that leave a residue, to waters of the United States. EPA proposed a draft pesticide general permit on June 4, 2010 to cover certain discharges resulting from pesticide applications. On October 31, 2011, the EPA issued a final NPDES *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*. This action was in response to a 2009 decision by the U.S. Sixth Circuit Court of Appeals (*National Cotton Council of America v. EPA*, 553 F.3d 927 (6th Cir., 2009)) in which the court vacated EPA's 2006 Final Rule on Aquatic Pesticides (71 Fed. Reg. 68483, November 27, 2006) and found that point source discharges of biological pesticides and chemical pesticides that leave a residue, into waters of the U.S. were pollutants under the CWA. The federal PGP applies where the EPA is the permitting authority. All delegated state NPDES authorities have issued state pesticide general permits.

Background

The MPCA issued a separate general permit for each pesticide use category for the application of pesticides to, including over and near, waters of the state as indicated below. These permits supply Minnesota PCA with information on the types of pesticides used, and the frequency of application in Minnesota waters, allowing the agency to make decision about discharges, pollutants, synergistic effects, and other water-management issues. These permits were public noticed. Comments were received during the public comment period. Coverage under these permits is automatic for anyone discharging a biological pesticide or chemical pesticide that leaves a residue to waters of the state until October 31, 2016.

a. Mosquito and Other Flying Insect Pest Control Pesticide General Permit (Issued November 16, 2011)
b. Forest Canopy Insect Pest Control Pesticide General Permit (Issued November 16, 2011)
c. Aquatic Nuisance Animal Pest Control Pesticide General Permit (Issued April 11, 2012)
d. Vegetative Pests and Algae Control Pesticide General Permit (Issued April 11, 2012)

After October 31, 2016, entities that exceed a threshold are required to submit an application for permit coverage (Notice of Intent or NOI) and pay an application fee. Those that do not exceed the threshold are not required to submit a NOI or an application fee, but are automatically covered by the permit and must comply with basic permit requirements.

Electronic NOIs (or eNOIs) are available on the Minnesota PCA's e-Services page. E-Services gives users online access to the NOI for permit coverage, check the status of application, permit coverage card, coverage letter, and facility report with contact information.

Critical Findings
None - The Region did not review the permit during FY12 and 13.

3. Pretreatment

The general pretreatment regulations (40 CFR 403) establish responsibilities of federal, state, and local government, industry and the public to implement pretreatment standards to control pollutants from industrial users which may cause pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

Background
The goal of this pretreatment program review was to assess the status of the pretreatment program in Minnesota, as well as assess specific language in POTW NPDES permits. MPCA is authorized to implement the pretreatment and sludge NPDES program components. With respect to NPDES permits, focus was placed on the following regulatory requirements for pretreatment activities and pretreatment programs:

- 40 CFR §122.42(b) (POTW requirements to notify Director of new pollutants or change in discharge);
- 40 CFR §122.44(j) (Pretreatment Programs for POTWs);
- 40 CFR §403.8 (Pretreatment Program Requirements: Development and Implementation by POTW);
- 40 CFR §403.9 (POTW Pretreatment Program and/or Authorization to revise Pretreatment Standards: Submission for Approval);
- 40 CFR §403.12(i) (Annual POTW Reports); and
- 40 CFR §403.18 (Modification of POTW Pretreatment Program).

The report also summarizes the following: Program Oversight (number of audits and inspections conducted; numbers of significant industrial users (SIUs) in approved pretreatment programs; numbers of categorical industrial users (CIUs) discharging to municipalities that do not have approved pretreatment programs); and the status of implementation of changes to the general pretreatment regulations at 40 CFR part 403 adopted on October 14, 2005 (known as the streamlining rule).

Critical Findings

- Minnesota permits should include a requirement to re-evaluate local limits during the permit term.
- The adequacy of a facility's pretreatment program should be considered when evaluating facility requests for water quality variances.

4. Storm water

The NPDES program requires storm water discharges from certain municipal separate storm sewer systems (MS4s), industrial activities, and construction sites to be permitted. Generally,

the EPA and NPDES-authorized states issue individual permits for medium and large MS4s and general permits for smaller MS4s, industrial activities, and construction activities.

Background

The Minnesota stormwater permits at the time of the report were as follows:

- 248 Phase I MS4s
- List storm water related GPs

Region 5 reviewed only the NPDES stormwater general permit during the period.

Critical Findings

- Minnesota should review the general permits to ensure that all the standard conditions are included.

IV. REGIONAL TOPIC AREA FINDINGS

A. Combined Sewer Overflows (CSOs)

Combined sewers were built to collect primarily domestic wastewater discharges, as well as storm water runoff, and transport this combined wastewater to treatment facilities. During larger wet weather events, the volume of storm water entering the combined sewer system may exceed the capacity of the combined sewers or the treatment plant. When this happens, combined sewers are designed to allow a portion of the untreated combined wastewater to overflow into the nearest stream, river, or lake.

CSOs contain not only storm water but also untreated domestic and possibly industrial wastewaters. CSOs are among the major sources responsible for beach closings, shell fishing restrictions, aesthetic impairments and other water impairments. As of 2012, MPCA identified two potential CSO communities. Of those only the Red Wing Permit was reviewed. Since the facility separated their system several years ago, no CSOs are authorized by the permit.

B. Sanitary Sewer Overflows (SSOs) and Bypasses

Background

Properly designed, operated, and maintained sanitary sewer systems are meant to collect and transport all of the wastewater flows into them to a POTW. However, periodic, unintentional discharges of untreated wastewater, sanitary sewer overflows (SSOs) from municipal sanitary sewers occur in almost every system. SSOs have a variety of causes, including but not limited to, blockages, line breaks, sewer defects that allow storm water and groundwater to overload the system, lapses in sewer system operation and maintenance, power failures, inadequate sewer design and vandalism.

Older collection system infrastructure can also permit storm water and snow melt to infiltrate sanitary sewer systems. During significant wet weather events it is possible for influent flows to exceed the design capacity of the treatment system. These wet weather flows are sometimes diverted around secondary treatment units and then either recombined with flows from the secondary treatment units or discharged directly into receiving waters from the treatment plant in order to prevent any damage to the treatment facility. These are referred to as bypasses. Of the ten permits reviewed as part of the core review, all six municipal permits contained SSO and bypass requirements and provisions.

Critical Findings

MPCA should ensure that conditions intend to implement the bypass conditions of 40 CFR §122.41(m), distinguish between bypasses and other unauthorized discharges. All discharges from points other than those identified in the permit must be prohibited with assurance that any discharges will be detected and reported. (Litchfield, Glencoe, WLSSD)

C. Mining

Metallic Mining can be an economic boon to communities and states but also has the potential to cause serious harm to the environment. Responsible and protective management of large volumes of waste rock, tailings, and slurry from extraction and processing of ore during the life of the mine is a challenge for the industry. These waste materials generally remain after mine site closure and have the potential to adversely impact water quality and aquatic ecosystems for years to come. During the period the Region began a comprehensive review of NPDES permit activities due to the increase in exploration and mine expansion proposals along with proposals for new mining operations in both unmined and previously mined areas. Many permits were long expired and were not adequately controlling the current discharge of pollutants. MPCA was heavily focused on permitting new and expanded facilities due to the economic lift such operations could bring to the communities.

Critical Findings

MPCA must ensure that expired mining permits are reissued. EPA and MPCA agreed to prioritize NPDES permitting for mining operations and eliminate the backlog of mining permits before the end of FY18.

MPCA must ensure that CWA and NPDES citations not be included in SDS Permits for operations that will not discharge to surface waters (Magnetation Plant 4).

V. ACTION ITEMS

This section provides a summary of the main findings of the review and provides proposed Action Items to improve MPCA's NPDES permit programs. This list of proposed Action Items will serve as the basis for ongoing discussions between U.S. EPA Region 5 and MPCA as well as between EPA Region 5 and EPA HQ. These discussions should focus on eliminating program deficiencies to improve performance by enabling good quality, defensible permits issued in a timely fashion.

The proposed Action Items are divided into three categories to identify the priority that should be placed on each Item and facilitate discussions between Regions and states.

- **Critical Findings** (Category One) - Most Significant: Proposed Action Items will address a current deficiency or noncompliance with respect to a federal regulation.
- **Recommended Actions** (Category Two) - Recommended: Proposed Action Items will address a current deficiency with respect to EPA guidance or policy.
- **Suggested Practices** (Category Three) - Suggested: Proposed Action Items are listed as recommendations to increase the effectiveness of the State's or Region's NPDES permit program.

The critical findings and recommended action proposed action items should be used to augment the existing list of "follow up actions" currently established as an indicator performance measure and tracked under EPA's Strategic Plan Water Quality Goals and/or may serve as a roadmap for modifications to the Region's program management.

A. Basic Facility Information and Permit Application

The Minnesota permit, fact sheets, and files that were reviewed provide a good level of facility information on which to base permit requirements. Permit applications appear to meet requirements for timing and completeness. Proposed Action Items to help MPCA strengthen its NPDES permit program include the following:

- Minnesota should ensure that the basis for each effluent limitations is explained in the fact sheet. (Category 2).
- Minnesota must ensure that SDS permits for discharges other than to surface waters do not reference CWA or NPDES authorities. (Category 1)

B. Technology-based Effluent Limitations

For the most part, the Minnesota permits reviewed properly implement TBELs for municipal and non-municipal facilities. Proposed Action Items to help the MPCA strengthen its NPDES permit program include the following:

- Some general permits did not contain numeric effluent limitations applicable to all facilities within a category. While in principal, general permits should not be used to

cover individual facilities that need specific limits, as long as categories are developed, it is an allowable interpretation of the regulation. (Category 2).

- The general permits did not include a BTA determination consistent with the 316(b) requirements of the CWA. (Category 2).

- The general permits as drafted stated that flow limits would be specified in the notice of coverage letter. EPA recommended that a reporting requirement be included to indicate whether that flow was being exceeded. (Category 2).

C. Water Quality-Based Effluent Limitations

For most parameters, the fact sheets reviewed provide a very good narrative of the process Minnesota EPA uses to determine if WQBELs are required. Proposed Action Items to help the MPCA strengthen its NPDES permit program include the following:

- There needs to be a discussion in the fact sheet of any parameters limited by WQBELs in the previous permit for which no effluent limits are in place in the current permit. For these dropped effluent limitations, information should be included to demonstrate that antibacksliding provisions are satisfied. (Category 2).
- For data points determined to be outliers and not included in the reasonable potential analysis, a more comprehensive discussion should be included in the fact sheet which describes the technical basis, rationale and impact of these outlier determinations. (Category 2).
- WQBEL duration (phosphorus, mercury) should be consistent with 40 CFR §122.45(d) (Category 1)

D. Monitoring and Reporting

Generally, monitoring and reporting requirements in the permits reviewed appeared to be consistent with program requirements. Proposed Action Items to help MPCA strengthen its NPDES permit program include the following:

- Monitoring frequency must be at a frequency appropriate to determine compliance with short-term effluent limits. Minnesota should review its procedures for assessing monitoring frequency to ensure that monitoring is required during periods of potential noncompliance and sufficient to match the duration of the effluent limitation .(Category 2)

E. Special and Standard Conditions

The standard conditions reviewed appeared at times, inconsistent with federal requirements. Legal review of the state's extensive template system may be resource intensive. The special conditions appeared to be appropriate and reasonably documented. The Bypass standard condition was revised in the context of the review of Litchfield permit.

- No action items at this time

F. Administrative Process (including public notice)

Several of the permits reviewed contained substantive changes between public notice and final issuance. Proposed Action Item to help MPCA strengthen its NPDES permit program include the following:

- MPCA must assure that, where substantive changes occur in permits between the public comment period and final permit issuance, these permits are provided to the Region consistent with the MOA. (Category 1).

G. Documentation (including fact sheet)

The fact sheets reviewed were generally found to be complete. Proposed Action Items to help MPCA strengthen its NPDES permit program include the following:

- EPA suggests MPCA provide a more extensive discussion of items that have been changed from the previous permit. (Category 2).

H. National Topic Areas

Proposed Actions Items for national topic areas are provided below.

1. Nutrients

Minnesota has developed numeric water quality criteria for total phosphorus for lakes and reservoirs and is in the process of developing criteria for rivers and streams. Where TMDLs have been completed for nutrient impaired waterbodies, permits contained phosphorus limits based on wasteload allocations contained in a TMDL. The Region is in the process of reviewing a petition to withdraw the state NPDES program based in part, on the alleged state failure to implement their narrative criteria in permits. Several permits reviewed by EPA where the Region raised concerns about phosphorus limitations have yet to be issued. Proposed Action Items to help MPCA strengthen its NPDES permit program include the following:

- For discharges to waters that are impaired for nutrients, and where a TMDL has not been completed, MPCA must ensure that the need for nutrient limitations are assessed consistent with applicable narrative and numeric water quality criteria. Phosphorus effluent limitations should be of a duration that is consistent with state numeric criteria duration (Category 1).

2. Pesticides

While the Minnesota PGP was not reviewed in detail during the year it was reviewed at the time of issuance and is very similar to the federal PGP and the state permit requirements appear to be consistent with federal NPDES pesticide permitting requirements. No Action Items for NPDES pesticides permitting were identified.

3. Pretreatment

The permits reviewed for pretreatment appeared to contain standard pretreatment boilerplate language that meets federal requirements and the fact sheets adequately describe the programs for each of the permits and municipalities. No Action Items for pretreatment were identified.

4. Stormwater

The two storm water permits that EPA reviewed were general permits for construction sites and MS4s, which are more recent, appear to meet or be more prescriptive than the minimum requirements. While numerous minor comments were noted which in combination improved the clarity and enforceability of the permits, no significant Action Items were identified.

I. Regional Topic Areas

Proposed Actions Items for regional topic areas are provided below.

1. Combined Sewer Overflows

Overall, the requirements of the CSO program and incorporation of requirements in NPDES permits are consistent with those required. The state no longer has CSO facilities permitted in the state. The Red Wing facility had CSOs at one time but they have been eliminated. No significant issues were identified. No Action Items for CSOs were identified.

2. Sanitary Sewer Overflow and Bypass

No significant SSO or Bypass issues were identified. Proposed Action Items to help MPCA strengthen its NPDES permit program include the following:

- Modification of the Bypass standard condition was required during one permit review. MPCA should ensure that the revised language is fully incorporated in all permit templates (Category 2)

3. Mining

Overall, mining NPDES permits are not current and this fact along with an anticipated increase in applications for new and expanded operations creates a substantial workload and environmental vulnerability.

- Minnesota must ensure that SDS permits for discharges other than to surface waters do not reference CWA or NPDES authorities. (Category 1)
- MPCA must ensure that expired mining permits are reissued. (Category 1)
- MPCA must ensure that mining permits are issued to protect water quality (Category 1).

J. Review Permits Status

Status of the permits substantially reviewed by the Region during FY2012 and FY2013, Table 2:

	Permittee	US EPA NPDES No.	Type	Regional Review Results To Date			
				Draft Permit Informal Objection	Draft Permit Additional Recommend Comments	Proposed Permit Objectionable Issues Identified	Final Permit Issued
1	Agripeat Cromwell	MN0055662	Ind	-monitoring -effluent limits	Yes	Formal Objection Resolved	08/09/2013
2	Alexandria Lakes Area SSD	MN0040738	Munc	-Phosphorus limit -compliance schedule.	Yes	No	07/01/2013
3	Nonmetallic Mining and Associated Activities	MNG490000	GP	monitoring -effluent limits	Yes	No	3/20/2012
4	Construction Storm Water (CSW) – GP	MNR100001	GP	No Objection	Yes	No	8/1/2013
5	Glencoe	MN0022233	Munc	-phosphorus	Yes	Not Proposed	No
6	Litchfield WWTF	MN0023973	Munc	-phosphorus	Yes	No	07/01/2014
7	Little Falls WWP	MN0020761	Munc	-phosphorus	Yes	Not Proposed	No
8	Non-Contact Cooling Water - GP	MNG25	GP	-Effluent limits -Monitoring -316a	Yes	No	No
9	Non-Contact Cooling Water - GP	MNG255	GP	-Effluent limits -Monitoring -316a	Yes	No	No
10	NSP DBA XCEL Energy-Riverside	MN0000892	Ind	No Objection	Yes	No	09/01/2013
11	Water Treatment Facility	MNG640000	GP	No Objection	No	No	No
12	Western Lake SSD	MN0049786	Munc	-phosphorus	Yes	Not Proposed	No
13	Red Wing WWTP	MN0024571	Munc	-Mercury Limit	Yes	No	01/01/2014
14	Small MS4s - GP	MNR040000	GP	No Objection	Yes	No	8/1/2013
15	Essar Steel	MN0068241	Ind	-GW to SW discharge -Monitoring	Yes	No	10/1/2012
16	Magnetation Plant 4*	MN0070378	SDS	-jurisdictional Issues	No	NA	5/21/2013
17	Mesabi Nugget	MN0067687	Ind	-WET	Yes	No	12/28/2012

*SDS Permit